

CLAIMS

1. A method for determining a first and a second reference picture used for inter-prediction of a block, comprising the steps of:

- (A) finding a co-located picture and block;
- 5 (B) determining a reference index;
- (C) mapping the reference index to a lowest valued reference index in a current reference list; and
- (D) using said reference index to determine said second reference picture.

2. The method according to claim 1, wherein said block comprises an H.264 direct-mode macroblock or macroblock partition.

3. The method according to claim 1, wherein step (C) further comprises:

storing a unique identifier for each reference picture, wherein said unique identifier is associated from (i) when said
5 unique identifier was used as an inter-reference in the co-located picture to (ii) when said unique identifier is made available as a potential List0 inter-reference for the current picture.

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4. The method according to claim 1, further comprising the step of:

storing a unique identifier of a direct-mode reference picture.

5. The method according to claim 4, wherein said direct-mode operates on (i) a macroblock when in a first configuration and (ii) a macroblock partition when in a second configuration.

6. The method according to claim 4, further comprising the step of:

searching the current reference List0 for the lowest valued reference index identifier by said unique identifier and
5 returning the value of said lowest valued reference index.

7. The method according to claim 1, wherein said method further comprising the step of:

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implementing an interpolative direct mode prediction and
a flexible choice for the picture referenced by a finite index
5 reference.

8. The method according to claim 1, wherein said method
is implemented in a video encoder.

9. The method according to claim 1, wherein said method
is implemented in a video decoder.

10. An apparatus for determining a first and a second
reference picture used for inter-prediction of a block, comprising
the steps of:

means for finding a co-located picture and block;
5 means for determining a reference index;
means for mapping the reference index to a lowest valued
reference index in a current reference list; and
means for using said reference index to determine said
second reference picture.

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11. The apparatus according to claim 10, wherein said block comprises an H.264 direct-mode macroblock or macroblock partition.

12. The apparatus according to claim 10, wherein said means for mapping comprises:

means for storing a unique identifier for each reference picture, wherein said unique identifier is associated from (i) when
5 said unique identifier was used as an inter-reference in the co-located picture to (ii) when said unique identifier is made available as a potential List0 inter-reference for the current picture.

13. The apparatus according to claim 10, further comprising:

means for storing a unique identifier of a direct-mode reference picture.

14. The apparatus according to claim 13, wherein said direct-mode operates on (i) a macroblock when in a first

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configuration and (ii) a macroblock partition when in a second configuration.

15. The apparatus according to claim 13, further comprising:

means for searching the current reference List0 for the lowest valued reference index identifier by said unique identifier
5 and returning the value of said lowest valued reference index.

16. The apparatus according to claim 10, wherein said apparatus further comprising:

means for implementing an interpolative direct mode prediction and a flexible choice for the picture referenced by a
5 finite index reference.

17. The apparatus according to claim 10, wherein said apparatus is implemented in a video encoder.

18. The method according to claim 10, wherein said apparatus is implemented in a video decoder.